

General Oriental alder (*Alnus orientalis*) belongs to the birch family (*Betulaceae*), which comprises two genera. The genus *Alnus*, which includes oriental alder, comprises about thirty-five species that are widely distributed in the northern hemisphere, and in the Andes. Oriental alder (*Alnus orientalis*) is the only indigenous species in Cyprus.

Nomenclature: The genus name, *Alnus*, derives from the Latin name for alder, whereas the specific epithet (*orientalis*, *oriental*) from its distribution in the Eastern Mediterranean.

Description Oriental alder is a deciduous, short-lived tree with a narrow crown, which can reach a height of 20 m. The stem is covered by grey bark, which is vertically fissured with age. The leaves are simple, alternate, ovate or oblong, 3-12 cm long and 1-6 cm wide, usually with serrate margins. The flowers are unisexual forming male and female inflorescences. The male inflorescences (catkins) are numerous, pendulous, appearing at the tips of the branches in early spring before the development of the leaves.

The female inflorescences are few at the tips of the short, lateral branches, usually developing with the leaves. It flowers from January to April. The fruit is cone-like, ovate, about 2 cm long and 1.5 cm wide and ripens gradually from May to September.



Male and female inflorescences

Distribution - Habitat In Cyprus, oriental alder is distributed from sea level up to an altitude of 1500 m. It occurs along rivers and streams and it is one of the characteristic species forming the riparian vegetation. Troodos range is the main area of its distribution due to the presence of many rivers and streams traversing the range to its foothills. To a smaller extent, it can also be found in other areas such as Polis Chrysochous, Episkopi (Lemesos district), and Keryneia. Oriental alder is also indigenous to Turkey, Syria and Lebanon.

Biological requirements: It thrives on deep, heavy soils (generally rich in alluvial deposits) and is easily adapted on acid and alkaline soils. Oriental alder is a light-demanding species, which in young age is sensitive to drought and late frost. It can be propagated by seed.



Fruit

History - Uses Homer mentions the plant with the name «klithra» (*Odyssey* 64, 239). The alder is classified by Theophrastus among the amphibious «... even of these some are impartial and as it were amphibious, such as tamarisk, willow, alder» (*Enquiry into Plants* 1.4.3). Theophrastus also describes alder as follows: «The alder also has but one form: in growth it is also erect, and it has soft wood and a soft heart-wood, so that the slender boughs are hollow throughout. The leaf is like that of pear, but larger and more fibrous. It has rough bark, which on the inner side is red: wherefore it is used for dyeing hides. It has shallow roots ... as large as that of the bay. It grows in wet places and nowhere else» (*Enquiry into Plants* 3.14.3)

The ornamental characteristics of the tree are the attractive foliage and the impressive male inflorescences, which make it suitable for open gardens and parks. It can tolerate atmospheric pollution and has the ability to fix atmospheric nitrogen through root nodulation. The wood of oriental alder is used in woodcarving and turnery as well as for the construction of agricultural tools and housekeeping utensils.

Conservation and Management The riparian vegetation, the trees and shrubs that grow along riverbanks and on rivers' alluvial plains, constitute a type of azonal vegetation, which in Cyprus occurs from sea level up to an altitude of 1500 m. The riparian ecosystems are valuable since they act as environmental corridors at landscape level. Furthermore, they offer habitat to many species, influence the water flow pattern as well as the quantity and quality of water, prevent erosion and floods and contribute to the replenishment of underground aquifers and to the diversity of landscape. However, they are threatened at European level. In Cyprus three types of deciduous riparian forests can be distinguished,



Riparian forest with oriental alder (*Alnus orientalis*)

depending on the dominant species. The commonest are the oriental plane woods (*Platanus orientalis*), while the woods of white willow (*Salix alba*) and oriental alder (*Alnus orientalis*) are infrequent. They are mainly threatened by the drying out of riverbeds due to the construction of water dams as well as over-pumping of water for agricultural and other uses.

The residual alluvial forests with *Alnus orientalis* are restricted in riverbeds with heavy soils. The most representative ones are found on the edge of Pafos forest and the valleys of Diarizos, Xeros and Ezousa rivers.

Oriental alder, as a species, is protected by the forest law of Cyprus, whereas its woodlands are included in the European directive 92/43/EEC, which is known as the habitats directive. The riparian forests with *Alnus orientalis* (Oriental alder), owing to their scarcity, comprise a priority habitat type. The most representative woodlands of Oriental alder have been included in *Natura 2000* sites in order to be preserved.



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(*Alnus orientalis*)



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